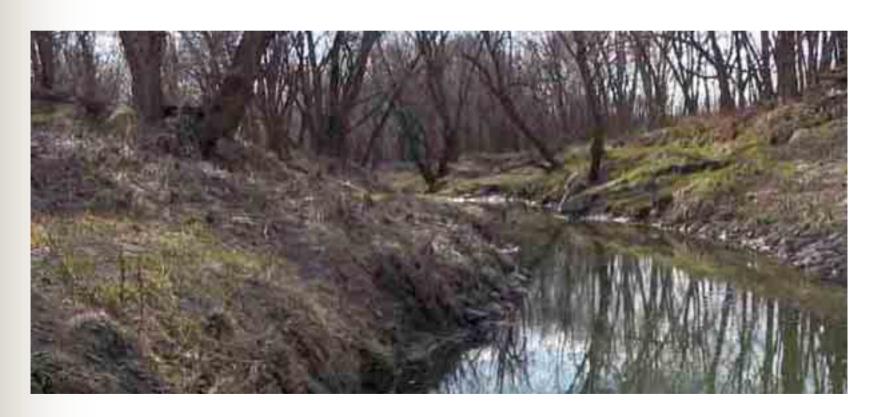


Use Attainability Analysis Web Conference



Use Attainability Analysis

Field Procedure and Reporting



Water Contact Uses

Whole Body Contact Recreation (Primary)

Complete Body Submergence

Accidental Ingestion Likely

Boating and Canoeing (Secondary)

Incidental Contact

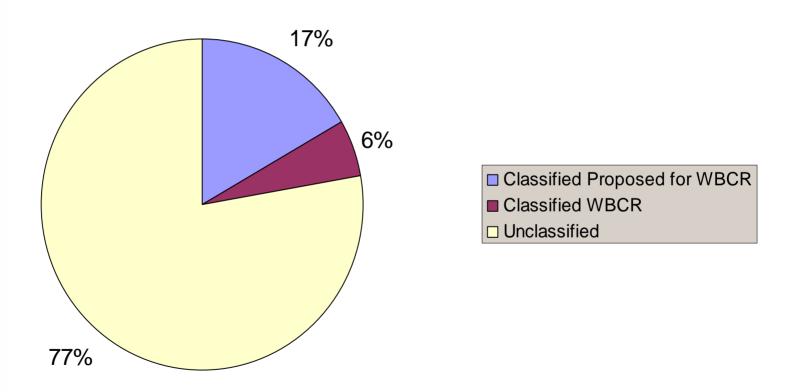
Ingestion Unlikely

Classified Water Bodies in MO

10 CSR 20-7.031 Tables G & H:

Designated Use	Se	gments	Acres/Miles		
Designated Use	Total	Percentage	Total		Percentage
All lakes	455		293,257.8	ac.	
WBCR lakes	147	32.3%	262,517.0	ac.	89.5%
Other lakes	308	67.7%	30,740.8	ac.	10.5%
All streams	3751		22,217.8	mi.	
WBCR streams	285	7.6%	5,531.5	mi.	24.9%
Other streams	3466	92.4%	16,686.3	mi.	75.1%
All in Tables G & H	4206				
WBCR waters	432	10.3%			
Other Waters	3774	89.7%			

All Waters of the State - Stream Miles



Criterion 2

Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use...

Applying Criterion 2 to WBCR

- The use is unattainable due to shallow depth, and
- Evidence shows no existing use.

Depth Criteria

- Deepest portion at least 1 meter, or
- Overall average depth at least $\frac{1}{2}$ meter

Waters Targeted for UAAs

- 554 Streams approx. 2770 miles
- Mostly Class C Streams
 - 110 Streams Receiving Effluent from POTWs
 - 223 Streams Receiving Effluent from Private WWTSs
 - 221 Streams Receiving NPS Runoff from Livestock Operations

2005-05-19_UAA_List.xis Printed: 6/3/2005 11:31 AM

List of Targeted Water Bodies for Recreational Use Attainability Analysis

State of Missouri Department of Natural Resources Water Protection and Soil Conservation Division Water Protection Program

Number of Facilities per Regional Office

Aumori of Lactings	ber wegn	mai Office				
UAA Progress	KCRO	NERO	SERO	SLRO	SWRO	Total
WWTF/water bodies with completed UAAs.	33	0	4	9	0	46
WWTF/water bodies slated to be investigated.	58	135	34	26	10	263
Second Priority [emphasis of UAA work].	20	20	47	40	9	136
Terminated facilities since Fall 2003.	4	7	5	3	1	20
Others not listed as a priority at this time.	110	105	106	89	36	446
Total domestic discharges to waters proposed as WBCR	225	267	196	167	56	911

	Legend Key
Reviewer	Status of UAA work or person/group conducting study
County	County where facility is located.
Region	MDNR regional office where facility is located.
Permit #	Operating permit number of the facility listed.
Facility Name	Facility name.
WBID#	Specific identification number of classified water body.
Water Body Name	Name of classified water body.
WB Class	Classification of water body.
HUC 8 #	USGS watershed idenification number.

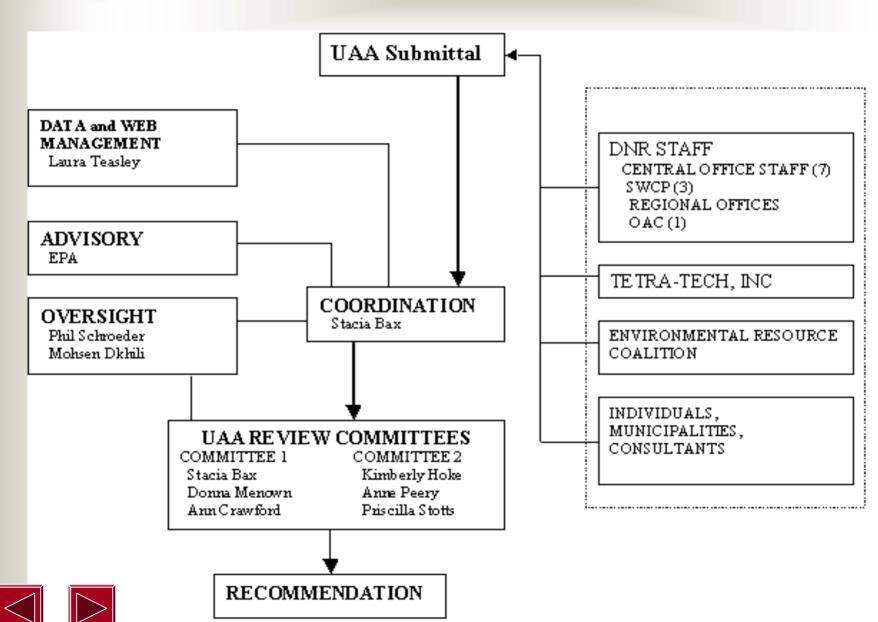
2005-05-19_UAA_List.xis Printed 6/3/2005 11:30 AM

Reviewer	County	Region	Permit #	Facility Name	WBID#	Water Body Name	WB Class	HUC 8 #
T 2nd Priority	CASS	KCR	MO0101796	OASIS MHP	3310	W. FK. EAST CR.	С	10290108
T 2nd Priority	CASS	KCR	MO0113450	OLSON ACRES	3310	W. FK. EAST CR.	С	10290108
-	CASS	KCR	MO0118214	SNEADS BARBEQUE	3311	MILL CR.	С	10300101
TT 2nd Priority	CASS	KCR	MO0109282	CASS CO MIDWY R-I SCH DIS	3313	PONEY CR	С	10290108
Tetratech	CEDAR	SWR	MO0055280	STOCKTON WWTP	1361	STOCKTON BR.	С	10290106
Tetratech	CHARITON	NER	MO0094714	MENDON WWTF	0596	HICKORY BR.	С	10280103
	CHARITON	NER	MO0048640	KEYTESVILLE WWTF	0670	MUSSEL FORK CR.	P	10280202
Second Priority	CHARITON	NER	MO0088510	LAKE NEHAI TONKAYEA WWTF	0670	MUSSEL FORK CR.	P	10280202
	CHARITON	NER	MO0087874	SALISBURY, CIRCLEVIEW SUB	0691	M. FK. CHARITON R.	P	10280203
	CHARITON	NER	MO0025313	SALISBURY N 6 ACRE LAGOON	7170	SALISBURY CITY LAKE	L3	10280203
Second Priority	CLARK	NER	MO0083747	RUNNING FOX SCHOOL	0037	FOX R.	P1	7110001
	CLARK	NER	MO0053457	WAYLAND WWTF	0038	FOX R.	P	7110001
Second Priority	CLARK	NER	MO0115126	BALDWIN MOBILE HOME PARK	0038	FOX R.	Р	7110001
	CLAY	KCR	MO0055204	SMITHVILLE WWTF	0315	L. PLATTE R.	P	10240012
	CLAY	KCR	MO0025011	KC, NORTHLAND MHP STP	0319	WILKERSON CR.	С	10240012
	CLAY	KCR	MO0028843	EXCELSIOR SPRINGS WWTF	0383	FISHING R.	P	10300101
Tetratech	CLAY	KCR	MO0107883	KEARNEY SBR WWTF	0383	FISHING R.	Р	10300101
Submitted	CLAY	KCR	MO0109002	HOLT WASTEWATER LAGOON	0391	MUDDY FK.	С	10300101
	CLAY	KCR	MO0120090	JJ CAMPGROUND	0391	MUDDY FK.	С	10300101
Submitted	CLAY	KCR	MO0048313	KC, FISHING RIVER WWTP	0394	FISHING R.	С	10300101
Second Priority	CLAY	KCR	MO0085855	LIBERTY VILLAGE MHP	3321	HOLMES CR.	С	10300101
Second Priority	CLAY	KCR	MO0119148	PLATTE CLAY/HOLMES CR HIL	3321	HOLMES CR.	С	10300101
	CLAY	KCR	MO0090778	LIBERTY, BOWLES ADDITION	3322	RUSH CR.	P	10300101
	CLAY	KCR	MO0113883	LIBERTY, UPPER RUSH CK WW	3322	RUSH CR.	P	10300101
TT 2nd Priority	CLAY	KCR	MO0120006	FOX RUN	3323	ROCK CR.	С	10300101
TT 2nd Priority	CLAY	KCR	MO0124931	CENTRAL RIVERS-WILMAR EST	3323	ROCK CR.	С	10300101
Submitted	CLAY	KCR	MO0048305	KC, ROCKY BRANCH STP	3326	ROCKY BR.	С	10240012
	CLINTON	KCR	MO0113751	TRIMBLE WWTF	0320	DICKS CR.	С	10240012
TT 2nd Priority	CLINTON	KCR	MO0117447	CENTENNIAL ACRES WWTF	0321	GROVE CR.	С	10240012
TT 2nd Priority	CLINTON	KCR	MO0123099	TIMBER SPRINGS EST WWTF	0321	GROVE CR.	С	10240012
	CLINTON	KCR	MO0099287	GOWER WWTP	0322	CASTILE CR.	С	10240012
Tetratech	CLINTON	KCR	MO0108880	STEWARTSVILLE WW LAGOON	0322	CASTILE CR.	С	10240012
Second Priority	CLINTON	KCR	MO0117897	AIRY ACRES MOBILE HOME CT	0322	CASTILE CR	С	10240012
	CLINTON	KCR	MO0121843	CLINTON CARE & REHAB CNTR	0352	L. PLATTE R.	С	10240012
	CLINTON	KCR	MO0120740	POUR BOY OIL COMPANY #7	0391	MUDDY FK.	С	10300101
	CLINTON	KCR	MO0121185	GLOBAL FIREWORKS, INC	0528	SHOAL CR.	С	10280101
	CLINTON	KCR	MO0121347	MDNR, WALLACE STATE PARK	0528	SHOAL CR.	С	10280101
	COLE	NER	MO0044300	ALGOA REGIONAL WWTF	0701	MISSOURI R.	Р	10300102
TF	COLE	NER	MO0121291	MO NAT GUARD, CENTERTOWN	0820	ROCK CR.	С	10300102
	COLE	NER	MO0097659	MDOC, CENTRAL MO CORRONT	0823	WORKMAN CR.	Р	10300102
TF.	COLE	NER	MO0105490	AQUASOURCE.BRIAR VILLAGE	0825	GRAYS CR.	Р	10300102

UAA_911_PS Page 7 of 23

Questions?



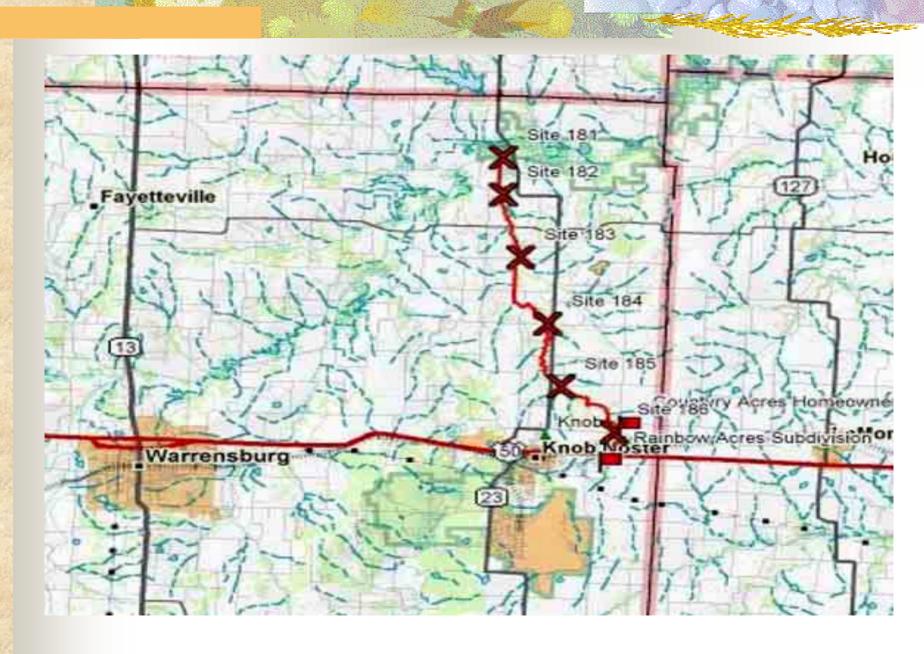


Field Preparation

- Water body identification.
- Pre-survey meeting with MDNR
 - Correct water body?
 - Water body identification number.
 - Watershed information.
- Recreational season.
- Base flow conditions.

Field Preparation cont...

- Points of observation
 - Minimum of three (3).
 - Publicly accessible points.
 - Classified water bodies.
 - Sub-segmentation of water body.



Field Data Sheets for Recreational Use Stream Surveys

RECEIVED

Data Sheet A - Water Body Identification

2005 MAY 23 PM 2: 59

	WATER PROTECTION PROGRAM
Water Body Name: (from USGS 7.5' quad) WALNUT CHEEK (181-186)	
8-digit HUC: 10300104	
Missouri WBID #: 0937	
County: JOHNSON COUNTY	
Upstream Legal Description:	
Downstream Legal Description:	
	odernia.
Downstream Coordinates: (UGS 84, ddd.ddddd) N39,90335 W093.56620 NIP	mouth
Discharger Facility Name(s): COUNTRY ACRES HOMEOWNERS / B	AJNOON ACRES SUBPRIVESTON
Discharger Permit Number(s):	
Number of Sites Evaluated: 6	
Name of Surveyor and Telephone Number: CHAD GARBOUR , 410-3	SS6-8193
Organization: TETRA TECH INC.	
Position: ASSOCIATE SCIENTIST	
, the undersigned, hereby affirm to the best of my knowledge, t atasheet is true and accurate.	hat all information reported on this UAA
ligned: CME.MD	ate:оч / ลา/อร

Field Data Sheets for Recreational Use Stream Surveys

RECEIVED

Data Sheet B - Site Characterization

2005 MAY 23 PM 2: 59

(A separate data sheet must be completed for each site) WATER PROTECTION PROGRAM

	Missouri WBID#: 18.4	3		Site Location Description: NE 700th Rd Overpass Facility Name: Country Acres Tomowners/Rainton Acres Subdivision				
ACC 26.8A	Site GPS Coordinates: N	55,85779 W095.5	6342					
	Date & Time: 4-21-2	005 1135 AM						
	Personnel: (B, EL)	/		Permit Number:				
	Current Weather Condition	ons: Partly Claudy 70	O*	Weather Conditions for Past 7 days:				
	Photo lds: Upstream:	Downstream		64 036 Othe	r:	, "		
Us	Uses Observed*:							
	☐ Swimming	☐ Skin diving	□ SCU	JBA diving	☐ Tubing	☐ Water skiing		
	☐ Wind surfing	☐ Kayaking	□ Boa	oating				
	☐ Hunting	☐ Trapping	☐ Fish	shing None of the above Other:				
	Describe: (include number of individuals recreating, frequency of use, photo-documentation of evidence of recreational uses, etc.) Downstream pool w/a max depth of 0.52m, Just downstream of the x site there is a pipeline running under the stream.							

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Campgrounds	
☐ Boating accesses	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway	
			T		
☐ No trespass sign	☐ Fence	Steep slopes	Other:	***	
dence of Human U		Steep slopes	Other:		
			☐ Other:	□ RV / ATV Tracks	

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest. (Include photographs)

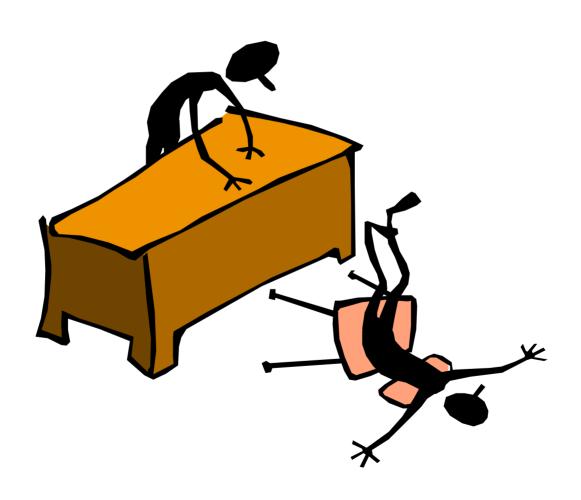
^{*}Some of this information is not intended to directly influence a decision on any one particular recreational use analysis but may point to conditions that need further analysis or that effect another use.

Page Two - Data Sheet B for WBID # 183 Stream Morphology: Upstream View Physical Dimensions: M. moters . 0.02. 0.08. 0.16 Width (ft): ☐ Riffle Length (ft): Avg. Depth (ft): Max. Depth (ft): Avg. Depth (t): 0,12 m Length (ft): 20 W Width (16): Max. Depth (ft): 0. 18 🛛 Run 7.6m ☐ Pool Width (ft): Length (ft): Avg. Depth (ft): Max. Depth (ft): 3 m Estimated (ft³/sec): 154/3m= 0.20 m/6 **∑** Flow Yes Yes Present? □ No 155, 145, 165. Downstream View Physical Dimensions: in meters: 0.09 0.14, 0.26, 0.26 0.08 Width (ft): Length (ft): □ Riffle Avg. Depth (ft): Max. Depth (ft): Length (N); 20 m Width (SQ): 4,4 m Max. Depth (Ru: O. Hom Avg. Depth (h): ().16, X Run Width (ft): Length (ft): Avg. Depth (ft): ☐ Pool Max. Depth (ft): 3m Estimated (17/500): 27.35/3m = 0.11 m/5 **S**Flow No. □ No. Present?

295, 275, 265

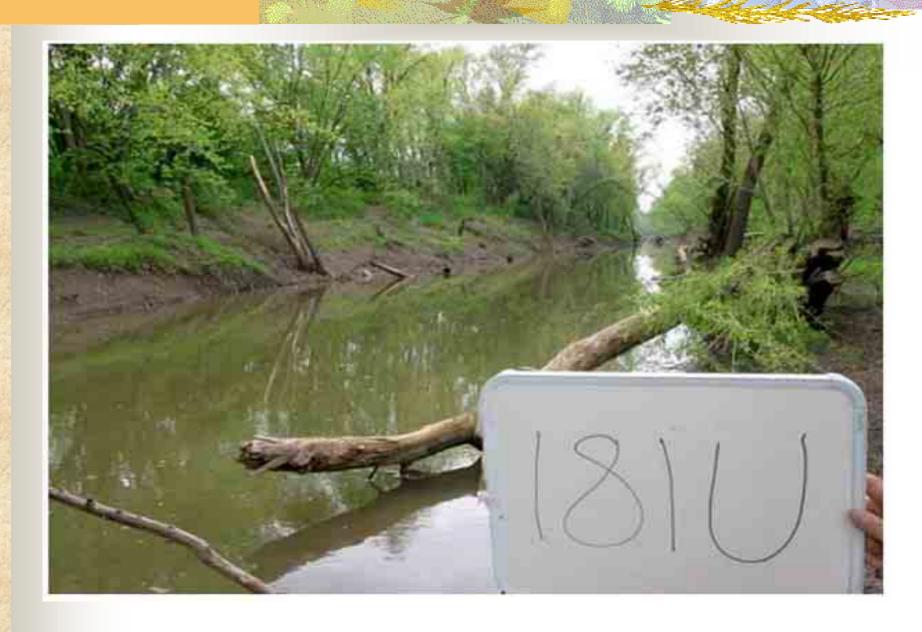
ubstrate*: (These	values should a	dd um to 1000%)	ر در ب	~~/ MW	5	
Q O % Cobbl		Gravel 60	% Sand (0	% Silt //	% Mud/Clay (') %	Bedroc
4!- V 7 4 4			· · · · · · · · · · · · · · · · · · ·		<u> </u>	
quatic Vegetatio	n*: (note amou	nt of vegetation or a	lgal growth at the asse	essment site)		
ALGAG THROU	ionau I,					
L						
ater Characteri	stics*: (Mark a	ll that apply.)				
Odor:	□ Sewage	☐ Musky	☐ Chemical	None None	☐ Other:	
Color:	\(\overline{\Sigma}\) Clear	☐ Green	□ Стау	☐ Milky	☐ Other:	
Bottom Deposit:	□ Studge	□ Solids	☐ Fine sediments	□ None	Other:	, <u>, , , , , , , , , , , , , , , , , , </u>
Surface Deposit:	□ Oil	□ Scum	☐ Foam	NOne	Other:	
emprehensive understanding on the recreation	anding of water on use analysis l , hereby affir	conditions. Consequent may point to cor	xiitions that need furth	n is not intended er analysis or th	t to directly influence a at effect another use. nation reported on this	UAA
			Date:	01/2//05		
rganization: 76	TRA TECH	JMC.	Position	n: <u>Aux za</u>	78 Se 3607257	
		EZY	r 4-21-	05		

Questions?

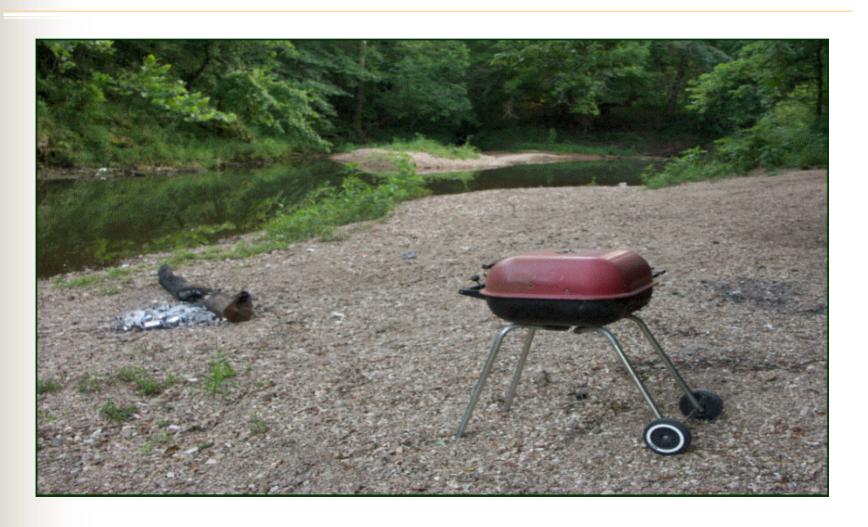




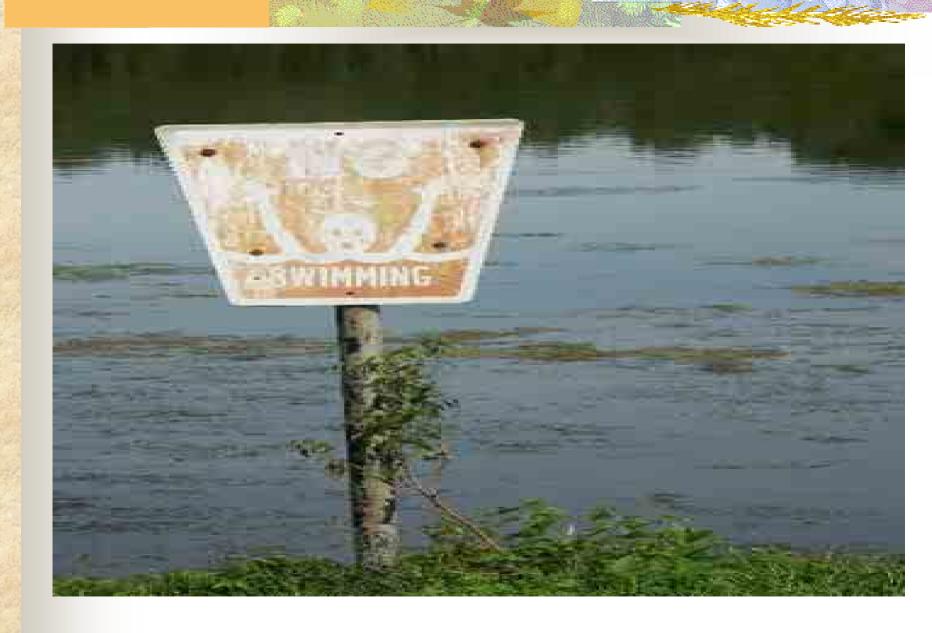


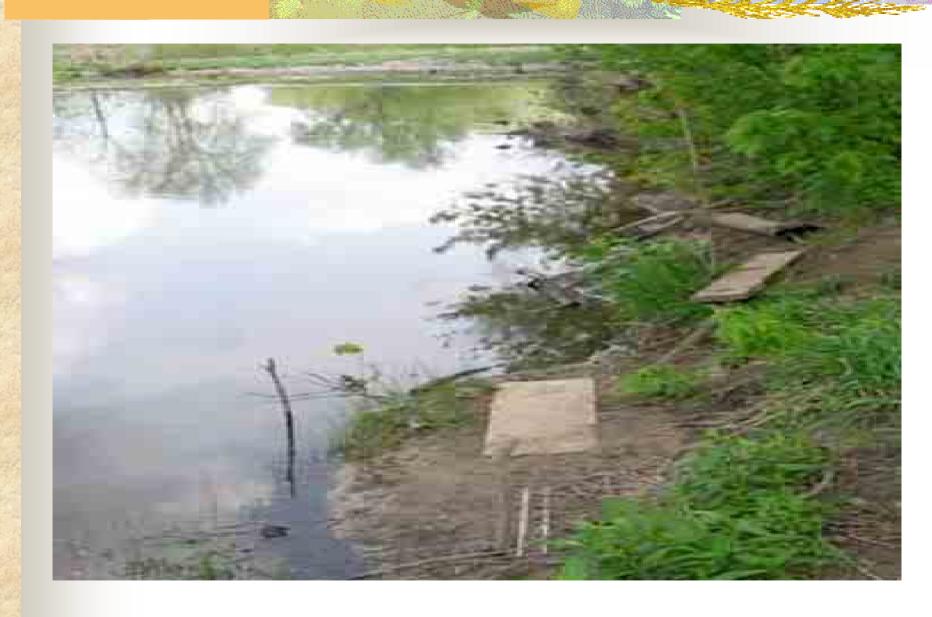


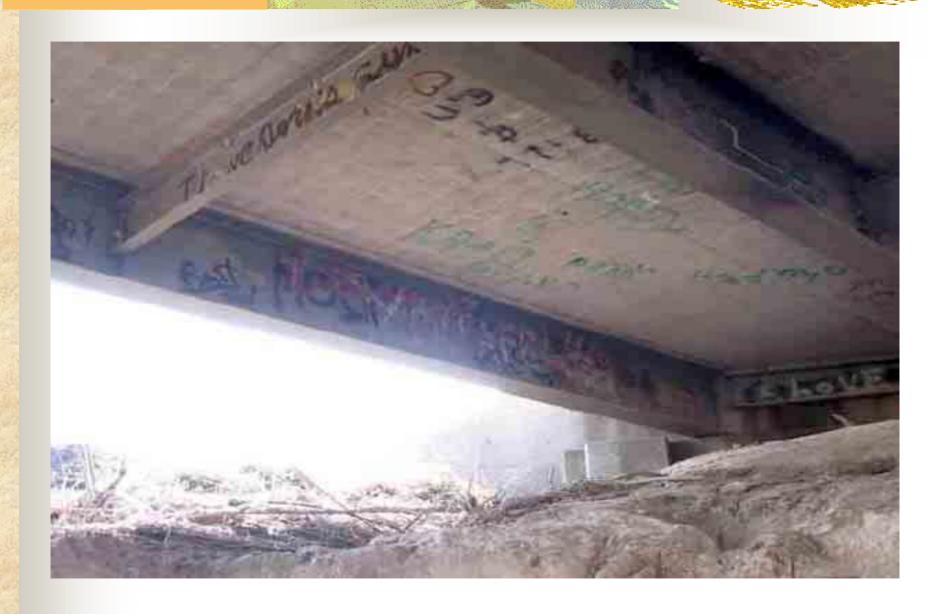
Evidence of Use











Interviews

- Recreational users, landowners, and local residents
- Location and extent of use
- History of use season and frequency
- Reasons for use (or no use)
- Any illnesses related to use?
- Interviews are recorded

Submittal and Review of UAA

- Two copies and all supporting information
- MDNR staff (Internal Review Committee) reviews and makes recommendation
- May require clarification if survey is not conclusive (changes must be made by author)

Results of Internal Review Committee

JAA Identification #:	0189			
Date of Report:	June 27, 2005			
Vater Body Under Evaluation Identification #: Name: Length of Segment: County (ies):	on: 0937 Walnut Creek (C) 11.0 miles Johnson			
ubmitter of UAA: Date Received:	Tetra Tech, Inc M ay 23, 2005			
Jse Evaluated:	Whole Body Contact Recre	eation		
JAA Completeness Check: All Required Inform a Correct Forms Used? Forms Signed and Da Comments:	?	⊠ Yes ⊠ Yes ⊠ Yes	No No No	
<u>Removal Criteria Evaluated</u> :	1-N atural Pollutant Sou 2-N atural, Ephemeral, I 3-N on-R emedial, H um a 4-H ydrologic M odificat 5-N atural Physical Feat 6-Substantial, W idespre	ntermittent or I an Caused Conditions. ures.	dition.	
Use Determination & Recom Has the use existed s Comments:	nmendation: ince November 28, 1975?	☐ Y e s	□ N o	⊠ U n k
stream criteri at diff purpo	survey occurred in April 200 n met the maximum depth at on at one out of five sites (sa erent sites indicated that the ses. Because of the overall do h evidence to retain the who	one out of five me site). Interv stream was not epth and the int	were observed sites and aver liews of two in used for recre erviews there	age depth ndividuals eational
Committee Recommend	dation: Retain Use	Modify U	U s e	Remove U
Committee Members:	Stacia Bax, Ann Crawford,	Donna Menow	'n	

Internal Review cont...

UAA Identification #: 0189

Date of Report: June 27, 2005

Water Body Under Evaluation:

Identification #: 0937

Name: Walnut Creek (C)

Length of Segment: 11.0 miles

County (ies): Johnson

Submitter of UAA: Tetra Tech, Inc

Date Received: May 23, 2005

<u>Use Evaluated</u>: Whole Body Contact Recreation

Internal Review cont...

UAA Completeness Check: All Required Information In Correct Forms Used? Forms Signed and Dated?	luded?		☐ No ☐ No ☐ No
Comments:			
□ 3-1 □ 4-1 □ 5-1 □ 6-1	Natural Pollutant Sou Natural, Ephemeral, I Condition. Non-Remedial, Huma Nydrologic Modifica Natural Physical Feat Substantial, Widespre Impact.	Intermittent or an Caused Contions. tures.	ndition.

Internal Review cont...

Use Determination &			<u></u>
Has the use ex	xisted since November 28, 1975?	Yes	No Unknown
Comments:			
Is the evaluate	ed use attainable?	☐ Yes	⊠ No
Comments:	UAA survey occurred in April 2005		
	The stream met the maximum depth average depth criterion at one out of		
	Interviews of two individuals at diff	`	,
	stream was not used for recreational		
	overall depth and the interviews the	re is not enou	gh evidence to
	retain the whole body contact design	nation.	
C		л 1°C тт Г	
Committee Reco	mmendation:	Viodity Use [X Remove Use
Committee Members:	: Stacia Bax, Ann Crawford, I	Donna Menov	vn
			. —

Questions?





Water Protection and Soil Conservation Division

Use Attainability Analysis

Upcoming revisions to the Missouri Water Quality Standards will require that over 22,000 miles of classified streams and over 293,000 acres of classified lakes be protected for swimming and other recreational uses, wherever attainable. This national initiative is commonly referred to as the 'fishable/swimmable' goal.

Owners or operators of wastewater treatment systems will be required to disinfect effluent, unless it Can be shown, through (1) an evaluation that disinfection is not required in order to meet bacteria standards in the classified stream or (2) a Use Attainability Analysis (UAA) that the classified stream below the facility cannot support swimming.

Anyone may perform a UAA and submit it to the department for review. Performing a UAA will help determine whether or not disinfection will be necessary at a facility.

Recreational Use Attainability Analysis Protocol PDF

UAA Online Seminar (archive)

STREAMGRAM sent to Stream Teams about UAAs PDF

Listing of Targeted Water Bodies for Use Attainability Analysis

Water Bodies Receiving Permitted Discharges -- Sorted by County PDF

Water Bodies Receiving Permitted Discharges -- Sorted by Facility Permit Number PDF

Water Bodies Potentially Affected by Nonpoint Sources -- Sorted by County PDF View Completed UAAs listed by County (7/1/05)

Quality Assurance Project Plans (QAPPs)

Tetra Tech, Inc.

Tetra Tech, Inc. - Target Stream/Facility List

Environmental Resource Coalition



Listing of Targeted Water Bodies for Use Attainability Analysis

Water Bodies Receiving Permitted Discharges -- Sorted by County PDF

Water Bodies Receiving Permitted Discharges -- Sorted by Facility Permit Number PDF

Water Bodies Potentially Affected by Nonpoint Sources -- Sorted by County PDF

View Completed UAAs listed by County (7/1/05)

Use Attainability Analysis

The Use Attainability Analysis is an ongoing process and in varying stages in Missouri. As a result, the number of waters with completed UAAs will vary from county to county. Click on a county name below to view a list of water bodies in that county. Click on the counties with a date beside them to view completed UAAs.

Adair	Andrew	Atchison	<u>Audrain</u>
<u>Barry</u>	<u>Barton</u>	Bates	<u>Benton</u>
Bollinger	Boone (7/1/05)	Buchanan (6/13/05)	<u>Butler</u>
<u>Caldwell</u> (6/13/05)	<u>Callaway</u> (7/1/05)	<u>Camden</u>	Cape Girardeau
Carroll	Carter	<u>Cass</u> (7/1/05)	<u>Cedar</u>
<u>Chariton</u>	Christian	<u>Clark</u>	<u>Clay</u> (6/29/05)
<u>Clinton</u> (6/24/05)	<u>Cole</u> (6/30/05)	Cooper	Crawford
<u>Dade</u>	<u>Dallas</u>	<u>Daviess</u>	<u>DeKalb</u> (6/13/05)
<u>Dent</u>	Douglas	<u>Dunklin</u>	<u>Franklin</u> (6/22/05)
Gasconade	<u>Gentry</u> (6/24/05)	Greene	<u>Grundy</u>
<u>Harrison</u>	<u>Henry</u> (6/24/05)	<u>Hickory</u>	Holt (6/13/05)
Howard	<u>Howell</u>	<u>Iron</u>	<u>Jackson</u> (6/13/05)

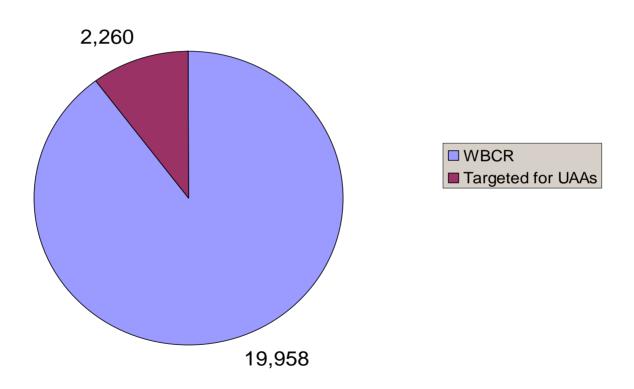
Johnson County Water Bodies

WBID	Water Body Name	T YPE		Committee Recommendation
0933	BearCr.	PS		
1253	BearCr.	NPS		
1250	Big Cr.	PS		
0930	Trib . to W. Fk . Postoak Cr.	NPS		
0929	W. Fk. Postoak Cr.	PS		
0918	Walnut Cr.	NPS		
0937	Walrut Cr.	PS	UAA PDF	
0920	N. Fk. Blackwater R.	NPS		
0925	Trib. to S. Fk. Blackwater R.	NPS		

Lafayette County Water Bodies

WBID	Water Body Name	TYPE		Committee Recommendation
0907	Davis Cr.	PS		
0912	Davis Cr.	PS	UAA PDF	Retain Use PDF
0402	E. Fk. Smi-A-Bar Cr.	PS		
3412	Fire Prairie Cr.	PS		
3413	Horseshoe Cr.	PS	<u>UAA</u> PDF	
3690	L. Horseshoe Cr.	PS		

Possible Designations on Classified Streams After Rulemaking and UAAs



Questions?



For Additional Information

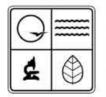
For additional information on

Use Attainability Analysis

browse our Web site at

http://www.dnr.mo.gov/wpscd/wpcp/wqstandard s/uaa/index.html

or call



Missouri
Department of
Natural Resources

1-800-361-4827